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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,305	11/14/2003	Clemens Jung	IT20030012	1221

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WHIRLPOOL PATENTS COMPANY - MD 0750
500 RENAISSANCE DRIVE - SUITE 102
ST. JOSEPH, MI 49085

EXAMINER

PATEL, RITA RAMESH

ART UNIT	PAPER NUMBER
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1792

MAIL DATE	DELIVERY MODE
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10/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,305

Applicant(s)

JUNG ET AL.

Examiner

Rita R. Patel

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1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2007.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,8,24-27,29,31,32,34-39 and 41-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,8,24-27,29,31,32,34-39 and 41-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Remarks and Amendments

This Office Action is responsive to the amendment filed on 8/7/07. Claims 2, 8, 24-27, 29, 31, 32, 34-39, and 41-44 are pending. Claims 24, 29, and 41 have been amended. Claim 28 has been cancelled. Applicant's arguments have been fully considered, but are not persuasive. Upon further search and consideration, the instant claims are finally rejected under the grounds of rejection described herein and thus, claims 2, 8, 24-27, 29, 31, 32, 34-39, and 41-44 are rejected for the reasons of record.

Applicant's amendments to primarily claims 24 and 41 include generally the a limitation comprising "determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the upper and lower spray planes"; consequently Applicant's remarks are directed towards these new limitations presented in claims 24 and 41. However, it is the position of the Examiner that the former Bashark, Smith, and Thies references teach this claimed feature of Applicant's invention. Briefly, the invention of Bashark-Smith obviates a turbidity sensing washing machine which had a controller for measuring and comparing turbidity values attained during any pauses at the end of any of the circulation steps. The invention of Thies is then presented to obviate the use of alternating spray arms in a washing machine for use with the Bashark-Smith invention, therefore, by using these alternating spray arms during the circulation wash cycle of the Bashark-Smith invention it is at once envisaged that during a pause after each spray arm is finished recirculating

liquid, then the turbidity sensor of Bashark-Smith allows the washing machine to obtain and compare turbidity measurements. For example, when the combined Bashark-Smith-Thies invention has sprayed a circulation cleaning liquid from it's top spray arm, it then pauses to take measurements of the turbidity, next the bottom spray arm may spray a circulated cleaning liquid therefrom and then the machine would pause again to take measurements of the turbidity as desired for however many spray arm cycles. Since the spray arms in Thies are taught to alternate, the invention of Bashark-Smith-Thies reads on Applicant's newly amended claims for "determining a degree of soiling by determining a difference value corresponding to the difference between the turbidity values of the upper and lower spray planes".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 8, 24-27, 29, 31, 32, 34-39 and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bashark (US Patent No. 3,888,269) in combination with Smith et al. herein referred to as "Smith" (US Patent No. 5,586,567) and Thies (US Patent No. 6,432,216).

Bashark discloses control system for dishwasher. The reference discloses that in Patent No. 3,279,481, a turbidity sensor is used to determine the turbidity of the rinse

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water. See col. 1, lines 60-67. The reference discloses sensing the turbidity of the dish treating liquid after the pump has been operating for a selecting period of time such as after one minute of the first rinse period. See col. 3, lines 3-20, and lines 49-68, and col. 4, lines 1-7, 36-46.

However, Bashark does not teach determining the degree of soiling of the rinse liquid by determining the turbidity values corresponding to the recirculation of the liquid in the lower and upper spray plane as claimed.

Smith teaches a turbidity sensing mechanism for a dishwasher. The reference also discloses the turbidity is a measure of the suspended and/or soluble soils in the fluid. See col. 3, lines 51-53. The reference discloses recirculation of the liquid in the lower and upper spray plane. Furthermore, the invention of Smith discloses that turbidity measurements can be taken during the pause immediately following any circulation step and will then provide a signal having a value representative of the turbidity of the fluid at the end of that circulation operation; then the controller 26 uses the initial or clean water signal as a benchmark or basis to determine the turbidity of the fluid at the end of other steps and bases subsequent operation cycles of the signal representing the turbidity of the fluid at the end of a preceding circulation step, col. 5, lines 22-32). It would have been obvious for one skilled in the art to use the lower and upper spray plane, and turbidity sensing mechanism taught Smith et al. in the Bashark process to obtain the claimed process. This is because both references are from the same technical endeavor, which is using the turbidity sensor to determine the turbidity of the rinse water. This is also because the steps of measuring the turbidity as taught by

Bashark will include determining the solubility of the soil as claimed. See Smith et al., col. 3, lines 51-53. This is also because the degree of turbidity depends on the amount of soil been found on the dishes. See Bashark, col. 3, lines 3-20.

Bashark and Smith teach the claimed invention of a turbidity sensing washing machine which measures and compares turbidity after different circulation cycles, except they fail to specifically state a method for alternately recirculating the rinsing liquid and thus the determined turbidity values being associated with the respective lower or upper spray plane in operation.

Thies, however teaches a soil sensing system for a dishwasher including an upper and lower spray arm. The reference teaches diverting wash liquid to the upper/lower wash arm assembly using valve 108, with associated measurements collected from pressure sensor 60 which provides a signal to controller 70 indicating the pressure limit within the soil collector 46. The measurement can be timed to occur when the was liquid is being supplied to each wash arm. It would have been obvious to one of ordinary skill in the art at the time of the invention to alternate the spray patterns in Bashark and Smith to ensure recirculation of washing liquid that is not too dirtied, as taught by Thies. Recirculation of washing liquid minimizes water use and detergent use, is more cost effective, and energy efficient. As taught by Thies, sensing the dirtiness of the water and associating it with different spray arms is known in the art. Recirculating really dirty water results in ineffectual cleaning and often requires even more cleaning which in turn increases time, financial burdens, and resources required to clean articles in a washing machine; therefore, sensing the dirtiness of the fluid is a

known means taught by Thies to achieve optimal cleaning. Incorporating this feature of Thies to the turbidity sensing washing machine of Bashark-Smith would have an obvious variant in the art of spraying recirculated washing fluid in washing machines that use soil measuring means. See Thies, col. 5, lines 8-12, 19-29 and col. 6, lines 35-40. Therefore, by using Thies' alternating spray arms during the circulation wash cycle of the Bashark-Smith invention it is at once envisaged that during a pause after each spray arm is finished recirculating liquid, then the turbidity sensor of Bashark-Smith allows the washing machine to obtain and compare turbidity measurements.

Conclusion

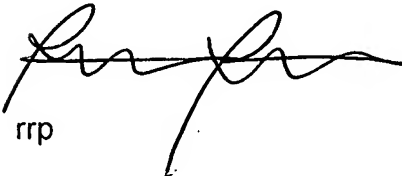
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita R. Patel whose telephone number is (571) 272-8701. The examiner can normally be reached on M-F: 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



rrp



MICHAEL BARR
SUPERVISORY PATENT EXAMINER